Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method of fabricating a polysilicon film by an excimer laser crystallization process, the method comprising following steps:

providing a substrate defined with a first region and a second region;

forming an amorphous silicon film on the substrate;

forming a mask layer on the amorphous silicon film;

performing a first photo-etching process to remove the mask layer in the first region;

forming a heat-retaining capping layer covering the mask layer in the second region and the amorphous silicon film in the fist region; and

performing the excimer laser crystallization process to make the amorphous silicon film, covered by the heat-retaining capping layer, in the first region crystallize to a polysilicon film, using an excimer laser to irradiate the amorphous film to make the amorphous silicon film in the second region, which is covered with the mask layer, become partially melted and make the amorphous film in the first region, which is not covered with the mask layer, become completely melted, and grains are grown laterally toward the first region from the interface between the first region and the second region.

Claim 2 (original): The method of claim 1 wherein the substrate comprises a buffer layer and the amorphous film is formed on the buffer layer.

Claim 3 (original): The method of claim 2 wherein the method further comprises a second photo-etching process to remove the heat-retaining capping layer, the mask layer, and the amorphous silicon film on the buffer layer in the second region after forming the

polysilicon film.

Claim 4 (original): The method of claim 1 wherein the method further comprises an etching process to remove the heat-retaining capping layer after forming the polysilicon film.

Claim 5 (original): The method of claim 1 wherein the mask layer comprises a silicon oxide layer, a silicon nitride layer, a metal layer, or a silicon-oxy nitride layer.

Claim 6 (original): The method of claim 1 wherein the mask layer is a multi-layer structure.

Claim 7 (original): The method of claim 1 wherein the heat-retaining capping layer comprises a silicon oxide layer, a silicon nitride layer, a metal layer, or a silicon-oxy nitride.

Claim 8 (canceled)

Claim 9 (currently amended): The ~~method of claim 8~~ method of claim 1 wherein the heat-retaining capping layer is used to decrease the heat dissipating rate of the amorphous silicon film for increasing the size of the grains formed in the excimer laser crystallization process.

Claim 10 (original): The method of claim 1 wherein the excimer laser crystallization process is performed with an excimer laser comprising a long duration laser.

Claim 11 (original): The method of claim 10 wherein the long duration laser has a period in a range of about 150 to 250 ns.

Claim 12 (currently amended): A method of fabricating a polysilicon film by an excimer laser crystallization process, the method comprising following steps:

providing a substrate defined with a first region and a second region;

forming an amorphous silicon film on the substrate;

forming a heat-retaining capping layer covering the amorphous silicon film in both of the first region and the second region;

forming a mask layer on the heat-retaining capping layer;

performing a first photo-etching process to remove the mask layer in the first region and expose the heat-retaining capping layer in the first region; and

performing the excimer laser crystallization process to make the amorphous silicon film, covered by the heat-retaining capping layer, in the first region crystallize to a polysilicon film, using an excimer laser to irradiate the amorphous film to make the amorphous silicon film in the second region, which is covered with the mask layer, become partially melted and make the amorphous film in the first region, which is not covered with the mask layer, become completely melted, and grains are grown laterally toward the first region from the interface between the first region and the second region.

Claim 13 (original): The method of claim 12 wherein the substrate comprises a buffer layer and the amorphous silicon film is formed on the buffer layer.

Claim 14 (previously presented): The method of claim 13 wherein the method further comprises a second photo-etching process after forming the polysilicon film to remove the heat-retaining capping layer, the mask layer, and the amorphous silicon layer on the buffer layer after forming the polysilicon film.

Claim 15 (previously presented): The method of claim 12 wherein the method further comprises an etching process to remove the heat-retaining capping layer after forming the

polysilicon film.

Claim 16 (original): The method of claim 12 wherein the mask layer comprises a silicon oxide layer, a silicon nitride layer, a metal layer, or a silicon-oxy nitride layer.

Claim 17 (original): The method of claim 12 wherein the mask layer is a multi-layer structure.

Claim 18 (original): The method of claim 12 wherein the heat-retaining capping layer comprises a silicon oxide layer, a silicon nitride layer, or a silicon-oxy nitride layer.

Claim 19 (canceled)

Claim 20 (currently amended): The ~~method of claim 19~~ method of claim 12 wherein the heat-retaining capping layer is used to decrease the heat dissipating rate of the amorphous silicon film for increasing the size of the grains formed in the excimer laser crystallization process.

Claim 21 (original): The method of claim 12 wherein the excimer laser crystallization process is performed with an excimer laser comprising a long duration laser.

Claim 22 (original): The method of claim 21 wherein the long duration laser has a period in a range of about 150 to 250 ns.

Claim 23 (previously presented): The method of claim 1 wherein when performing the excimer laser crystallization, the amorphous silicon film in the first region is not directly exposed under the excimer laser because the amorphous silicon film in the first region is covered by the heat-retaining capping layer.

Claim 24 (previously presented): The method of claim 1 wherein the heat-retaining capping layer is used to reduce a heat dissipation rate in the crystallization process and maintain the amorphous silicon film in the first region in a higher temperature environment when performing the excimer laser crystallization for increasing grain sizes of the polysilicon film effectively.

Claim 25 (previously presented): The method of claim 12 wherein when performing the excimer laser crystallization, the amorphous silicon film in the first region is not directly exposed under the excimer laser because the amorphous silicon film in the first region is covered by the heat-retain capping layer.

Claim 26 (previously presented): The method of claim 12 wherein the heat-retaining capping layer is used to reduce a heat dissipation rate in the crystallization process and maintain the amorphous silicon film in the first region in a higher temperature environment when performing the excimer laser crystallization for increasing grain sizes of the polysilicon film effectively.